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(54) A diamond sintered compact and a process for the production of the same

(57) The present invention aims at providing a material for a diamond sintered compact tool, which has a high strength and is available as a material for a cutting tool.

Accordingly, the present invention is concerned with a diamond sintered compact comprising a WC-Co type cemented carbide substrate having slight undulation

and a diamond sintered compact bonded to one surface of the substrate by sintering during a step of sintering at an ultra-high pressure and high temperature, which has a plate thickness is 0.5 mm to 5 mm and an outer diameter is at least 20 mm and whose diamond sintered compact layer has at least 50 % of a thickness area within a range of 0.05 mm to 0.4 mm and contains Co diffusing from the cemented carbide substrate.

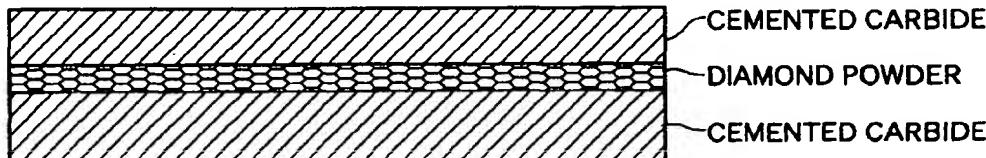


FIG. 1

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EUROPEAN SEARCH REPORT

Application Number

EP 99 30 6088

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)						
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim							
X	US 5 011 515 A (FRUSHOUR ROBERT H) 30 April 1991 (1991-04-30) * column 3, line 13 - column 3, line 21 * * column 5, line 50 - column 5, line 56; figures 2-7; example 1 *	1-8	B01J3/06 C23C30/00 B22F7/06 B24D3/18 B24D18/00						
X	EP 0 786 300 A (GEN ELECTRIC) 30 July 1997 (1997-07-30) * column 1, line 3 - column 10 * * column 5, line 42 - column 6, line 11; claims 1,2,7,8; figures 2-6 *	1-8							
X	US 4 293 618 A (HARA AKIO ET AL) 6 October 1981 (1981-10-06) * claim 1; example 1 *	5-8							
X	EP 0 460 306 A (EXXON RESEARCH ENGINEERING CO) 11 December 1991 (1991-12-11) * page 7, line 2 - page 7, line 3; example 1 *	5-8							
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)						
			B01J C04B E21B C23C B22F B24D						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 33%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>22 August 2000</td> <td>Willsher, C</td> </tr> </table> <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>				Place of search	Date of completion of the search	Examiner	THE HAGUE	22 August 2000	Willsher, C
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22-08-2000

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